

Canadian Energy Use Intensity by Property Type

OVERVIEW

This reference table is designed to help you to compare your property's energy use intensity (EUI) to the national median (or mid-point) energy use of similar properties.

Benchmarking Your Property

When benchmarking in Portfolio Manager, we recommend that you focus on the primary function (or main activity) in your building(s). Begin by selecting your primary function from the table below and then enter as few additional use types as possible. Benchmarking your building using a single use type will most closely approximate how your building would have been recorded in the reference data survey, and therefore yield the most accurate comparisons to median performance. In some cases, buildings may have multiple distinctly different uses. For example, an office and a hotel that share a common building. In these mixed-use settings, it is appropriate to enter multiple use types. Definitions of all property types are available at: www.energystar.gov/PMGlossary.

Using Median Site and Source Energy Use Intensity (EUI)

The **national median source EUI** is a recommended benchmark metric for all buildings. The median value is the middle of the national population—half of buildings use more energy, half use less. The median works better than the mean (arithmetic average) for comparing relative energy performance, because it more accurately reflects the mid-point of energy use for most property types and removes the effect of high-value outliers that may skew the data.

The table presents the median in both **site EUI** and **source EUI**. Site EUI is what you may be familiar with from your utility bills. Site EUI contains a mixture of what is called primary energy (i.e. a raw fuel like natural gas) and secondary energy (i.e. a converted product like electricity or district steam). Source energy converts secondary energy types into a unit that is comparable to primary energy which considers all transmission, delivery and production losses, limiting credits or penalties based on energy source or utility. You can learn more about source energy and the way it is computed at www.energystar.gov/SourceEnergy.

While almost all commercial building types have a national Median Source EUI, some (**presented in cyan with an asterisk**) will also have a 1–100 ENERGY STAR Score. The score evaluates a building relative to its peers, similar to the median energy use values, and also adjusts for climate and business activity. You can learn more about the score at: www.energystar.gov/ENERGYSTARScore.

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Understanding Reference Data

The rightmost column in the table indicates the reference data source we use to determine the median performance for your peer group. To compute the national median, we always rely on nationally representative data.

For Canadian values, we primarily reference four surveys:

- Survey of Energy Consumption of Multi-Unit Residential Buildings – 2018 (SECMURBs)
<https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/menus/murb/2018/tables.cfm>
- Survey on Commercial and Institutional Energy Use – 2014 (SCIEU)
<http://www.statcan.gc.ca/daily-quotidien/160916/dq160916c-eng.htm>
- Survey on Energy Consumption of Arenas – 2014 (SECA)
<http://www.statcan.gc.ca/daily-quotidien/160830/dq160830d-eng.htm>
- Commercial and Institutional Building Energy Use Survey - 2000 (CIBEUS)
http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/data_e/CIBEUS_ENG.pdf

In addition, for two property types, U.S. survey data is referenced because there is no equivalent survey data for Canada. For Data Centres, the EPA led a data collection project with industry groups to collect a representative survey from 2007 to 2009. For Water and Wastewater Treatment Plants, the American Waterworks Association (AWWA) conducted a national survey of facilities.

Canadian National Median Reference Values for All Portfolio Manager Property Types

Broad Category	Primary Function	Further Breakdown (where needed)	Source EUI (GJ/m ²)	Site EUI (GJ/m ²)	Reference Data Source - Peer Group Comparison
Banking / Financial Services	Bank Branch		1.55	0.99	SCIEU - Offices
	Financial Office*				
Education	Adult Education		1.41	1.18	CIBEUS - Adult Education and Business School
	College/University		1.44	1.01	SCIEU – Other (Post Secondary) ⁱ
	K-12 School*		1.07	0.75	SCIEU - Primary and High Schools
	Pre-school/Daycare		1.37	0.83	SCIEU - Other (Pre-School and Daycare) ⁱⁱ
	Vocational School		1.41	1.18	CIBEUS - Adult Education and Business School
	Other - Education		1.24	0.92	CIBEUS - Education
Entertainment / Public Assembly	Convention Centre		2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
	Movie Theatre		1.59	0.93	CIBEUS - Casino, Movie and Night Club
	Museum		2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
	Performing Arts		2.43	1.74	
	Recreation	Ice/Curling Rink*	1.76	1.15	SECA - Arenas
		Bowling Alley	1.89	1.51	CIBEUS - Pool, Skating Rink, Fitness Centre and Bowling
		Fitness Centre/Health Club/Gym			
		Roller Rink			
		Swimming Pool			
		Other - Recreation	1.83	1.11	CIBEUS - Entertainment and Recreation
	Social/Meeting Hall		2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
	Stadium	Indoor Arena	2.49	1.65	SECA - Large Facilities (limited data set)
		Race Track	1.83	1.11	CIBEUS - Entertainment and Recreation
		Stadium (Closed)	1.83	1.11	

Broad Category	Primary Function	Further Breakdown (where needed)	Source EUI (GJ/m ²)	Site EUI (GJ/m ²)	Reference Data Source - Peer Group Comparison
Entertainment / Public Assembly	Stadium	Stadium (Open)	1.83	1.11	CIBEUS - Entertainment and Recreation
		Other - Stadium	1.83	1.11	
	Other	Aquarium	2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
		Bar/Nightclub	1.59	0.93	CIBEUS - Casino, Movie and Night Club
		Casino	1.59	0.93	
		Zoo	2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
		Other - Entertainment/Public Assembly	2.43	1.74	
Food Sales & Service	Convenience Store	Convenience Store with Gas Station*	3.50	1.91	SCIEU - Food and Beverage Sales
		Convenience Store without Gas Station*	3.50	1.91	
	Restaurant/Bar	Bar/Nightclub	1.59	0.93	CIBEUS - Casino, Movie and Night Club
		Fast Food Restaurant	4.12	3.17	SCIEU - Other (Restaurants) ⁱⁱⁱ
		Restaurant	4.12	3.17	
		Other - Restaurant/Bar	4.12	3.17	
	Supermarket/Grocery Store*		3.50	1.91	SCIEU - Food and Beverage Sales
	Wholesale Club/Supercentre		1.60	1.13	SCIEU - Retail (Standalone)
	Other	Food Sales*	3.50	1.91	SCIEU - Food and Beverage Sales
		Food Service	4.12	3.17	SCIEU - Other (Restaurants) ^{iv}
Health Care	Ambulatory Surgical Centre		1.47	1.02	CIBEUS - Out Patient Care
	Hospital	Hospital (General Medical & Surgical)*	3.09	2.22	SCIEU - Hospitals
		Other/Specialty Hospital	3.09	2.22	
	Medical Office*		1.48	0.98	SCIEU - Medical Offices
	Outpatient Rehabilitation/Physical Therapy		1.47	1.02	CIBEUS - Out Patient Care
Health Care	Residential Care Facility*		1.47	1.04	SCIEU - Nursing and Residential Care

Broad Category	Primary Function	Further Breakdown (where needed)	Source EUI (GJ/m ²)	Site EUI (GJ/m ²)	Reference Data Source - Peer Group Comparison
	Senior Living Community*		1.47	1.04	
	Urgent Care/Clinic/Other Outpatient		1.47	1.02	CIBEUS - Out Patient Care
Lodging / Residential	Barracks		1.98	1.45	CIBEUS - Accommodation
	Hotel		1.37	0.88	SCIEU - Hotel and Motel
	Multifamily Housing*		1.14	0.82	SECMURBs – Multifamily Housing
	Prison/Incarceration		1.67	1.28	CIBEUS - Public Order and Safety
	Residence Hall/Dormitory		1.98	1.45	CIBEUS - Accommodation
	Residential Care Facility*		1.47	1.04	SCIEU - Nursing and Residential Care
	Senior Living Community*		1.47	1.04	SCIEU - Nursing and Residential Care
	Other - Lodging/Residential		1.37	0.88	SCIEU - Hotel and Motel
Mixed Use	Mixed Use Property		1.42	0.98	SCIEU - Other
Office	Medical Office*		1.48	0.98	SCIEU - Medical Offices
	Office*		1.55	0.99	SCIEU - Offices
	Veterinary Office		1.47	1.02	CIBEUS - Out Patient Care
Parking	Parking		N/A	N/A	N/A
Public Services	Courthouse		1.67	1.28	CIBEUS - Public Order and Safety
	Drinking Water Treatment & Distribution (Average EUI presented in Energy per Flow in metres cubed per day)		1.18	0.63	AWWA - Water Treatment Plant
	Fire Station		1.59	1.23	CIBEUS - Municipal Administration
Public Services	Library		2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings

Broad Category	Primary Function	Further Breakdown (where needed)	Source EUI (GJ/m ²)	Site EUI (GJ/m ²)	Reference Data Source - Peer Group Comparison
	Mailing Centre/Post Office		1.60	1.20	CIBEUS - Public Administration
	Police Station		1.67	1.28	CIBEUS - Public Order and Safety
	Prison/Incarceration		1.67	1.28	
	Social/Meeting Hall		2.43	1.74	CIBEUS - Public Assembly excluding Public Worship Buildings
	Transportation Terminal/Station		1.36	1.06	CIBEUS - Transportation Maintenance Facilities
	Wastewater Treatment Plant (Average EUI presented in Energy per flow in metres cubed per day)		1.51	0.80	AWWA - Wastewater Plant
	Other - Public Services		1.42	0.98	SCIEU - Other
Religious Worship	Worship Facility		0.84	0.69	SCIEU – Other (Place of Worship) ^v
Retail	Automobile Dealership		1.60	1.13	SCIEU - Retail (Standalone)
	Convenience Store	Convenience Store with Gas Station*	3.50	1.91	SCIEU - Food and Beverage Sales
		Convenience Store without Gas Station*	3.50	1.91	
	Mall	Enclosed Mall	4.73	4.51	SCIEU - Retail (Enclosed Malls)
		Lifestyle Centre	0.84	0.74	SCIEU - Retail (Strip Malls)
		Strip Mall	0.84	0.74	
		Other - Mall	4.73	4.51	SCIEU - Retail (Enclosed Malls)
	Retail Store		1.60	1.13	SCIEU - Retail (Standalone)
	Supermarket/Grocery Store*		3.50	1.91	SCIEU - Food and Beverage Sales
	Wholesale Club/Supercentre		1.60	1.13	SCIEU - Retail (Standalone)
Technology / Science	Data Centre (Average PUE presented in place of EUI:		1.82	1.82	EPA - Data Centre

Broad Category	Primary Function	Further Breakdown (where needed)	Source EUI (GJ/m ²)	Site EUI (GJ/m ²)	Reference Data Source - Peer Group Comparison
	<i>PUE = Total Energy / IT Energy</i>				
	Laboratory		1.42	0.98	SCIEU - Other
	Other - Technology/Science		1.42	0.98	
Services	Data Centre <i>(Average PUE presented in place of EUI: PUE = Total Energy / IT Energy)</i>		1.82	1.82	EPA - Data Centre
	Personal Services (Health/Beauty, Dry Cleaning, etc.)		1.31	1.00	CIBEUS - Non-food services
	Repair Services (Vehicle, Shoe, Locksmith, etc.)		1.39	0.92	SCIEU – Other (Repair) ^{vi}
	Other - Services		2.14	1.37	CIBEUS - Services
Utility	Drinking Water Treatment & Distribution <i>(Average EUI presented in Energy per Flow in metres cubed per day)</i>		1.18	0.63	AWWA - Water Treatment Plant
	Energy/Power Station		1.42	0.98	SCIEU - Other
	Wastewater Treatment Plant <i>(Average EUI presented in Energy per flow in metres cubed per day)</i>		1.51	0.80	AWWA - Wastewater Plant
	Other - Utility		1.42	0.98	SCIEU - Other
Warehouse / Storage	Self-Storage Facility		1.02	0.63	SCIEU - Non-refrigerated Warehouse
	Warehouse/Distribution Centre	Distribution Centre	1.02	0.63	
		Non-Refrigerated Warehouse	1.02	0.63	
		Refrigerated Warehouse	2.38	1.33	SCIEU - Refrigerated Warehouse (limited data set)
Other	Other	Uncategorized buildings	1.42	0.98	SCIEU - Other

ⁱ Results are based on available observations in the “Other” activity with similar user descriptions.

ⁱⁱ Ibid.

ⁱⁱⁱ Ibid.

^{iv} Ibid.

^v Ibid.

^{vi} Ibid.